

Attorney Docket: 119.002

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IN RE APPLICATION OF :

Nagi M. Awad :

Examiner: Marc S Zimmer

SERIAL NO.: 10/646,122 :

Art Unit: 1712

FILED: August 22, 2003 :

FOR: CROSS-LINKED SILICONE GELS; :

PRODUCTS CONTAINING THE SAME; :

AND METHODS OF MANUFACTURE :

THEREOF :

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Assistant Commissioner for Patents

United States Patent and Trademark Office

PO Box 1450

Alexandria, VA 22313-1450

DECLARATION of Nagi M. Awad

Dear Sir:

I, Nagi M. Awad, residing at 322 Freeman's Lane, Franklin Lakes, NJ 07417,  
hereby declare and say as follows:

1. I graduated from Ain Shams University, Cairo, Egypt in 1962, having obtained a Bachelor of Science degree in Chemistry.
2. From then until 1968, I was an Industrial Research Fellow in the Chemistry Department of the Ministry of Industry, Cairo, Egypt.

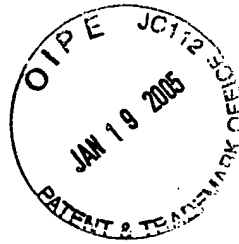
3. In 1968, I also graduated from Cairo University, Cairo, Egypt, having obtained a Bachelor of Science degree in chemical Engineering.
4. In 1969, I graduated from Ain Shms University, Cairo, Egypt, having obtained a Master of Science degree in Physical Chemistry
5. From then until 1976, I was employed as R&D manager of Nice Pak, Mount Vernon, NY where among other things, my duties included developing a line of alcohol-free wet towelette products.
6. From then until 1984, I was employed as a Research Director at Hydrolabs, Patterson, NJ, where my duties involved, among other things, development of a line of textile auxiliaries..
7. In 1980, I also graduated from Polytechnic Institute of Brooklyn, Brooklyn, NY, having obtained a PhD degree in Polymer Chemistry.
8. From 1984 to the present I have been the founder and President of NuTech Corporation, Newark, NJ, a mid-sized specialty chemical business that focuses on development of novel products to improve industrial processes. Representative products have included defoamers used in textile dyeing, inks, paint preparation, cutting oils, formulations for shaping metal components, cosmetic silicone gels.
9. I am the inventor of US Ser. No. 10/646,122, filed August 22, 2003, the current pending application
10. I have read and am familiar with the outstanding Office Action of November 24, 2004.

11. I give this declaration to demonstrate to the Examiner that the process steps of continued mixing with a large blade throughout polymerization leads to a different product with different properties than mixing is halted when gelling is visually noticed or when mixing is accomplished with a small blade. The present Declaration is also provided to present to the Examiner additional details about the monomers used in the polymerizations.
12. In all of the following reported experiments as well as in all of the formulations discussed in the previously presented IDSs in the present application, the  $\alpha,\omega$ -divinylpolydimethylsiloxane used was the same material having a molecular weight of  $22,500 \pm 2,250$ , the polymethylhydrosiloxane varied between materials having molecular weights nominally mentioned as (a) 3,756, (b) 3,756, and (c) 3,785. The undersigned is not aware of the range of the molecular weight present in each of these materials; and the  $\alpha,\omega$ -divinylpolydiphenyldimethylsiloxane was of average molecular weight of about 18,900, but the manufacturer did not designate the range of molecular weights in the product.
13. The following components were used in all of the comparison formulations presented in this declaration:

TABLE I

<u>Component</u>	<u>% of formulation for polymerization</u>
1) Pentameric Cyclomethicone	94.005
2) $\alpha,\omega$ -divinylpolydimethylsiloxane	5.19
3) Polymethylhydrosiloxane	0.411
4) Platinum catalyst in	0.00393
<u><math>\alpha,\omega</math>-divinylpolydimethylsiloxane</u>	<u>0.389</u>
Total polymerization mixture	99.99893

14. Sample A is prepared by blending the above components 1-4 in a Kitchen Aide Dough Mixer on a fast mixing setting using a large blade. Sample A is allowed to continue mixing until polymerization is complete. This represents the Kuwata practice.
15. Sample B is prepared by blending the above components 1-4 in a Kitchen Aide Dough Mixer on a fast mixing setting using a large blade; however, when gelling is first visually noticed, the mixing is halted and the mixture is allowed to complete polymerization without further mixing. This represents the process used in the claim 1 of the present invention except that cyclomethicone is the polymerization medium instead of the invention hydrocarbon.
16. Sample C is prepared by blending the above components 1-4 in a Kitchen Aide Dough Mixer on a fast mixing setting using a small blade. Sample C is allowed to continue mixing until polymerization is complete; however, because only a small blade is used, only a relatively small portion of the mixture is moved as the blade turns through the mass. This embodiment represents the process used in the instant invention claim 34 except that cyclomethicone is used as the polymerization medium instead of the invention hydrocarbon.



17. Once polymerization is complete, each of these Samples A-C respectively is passed through a colloid mill to obtain a paste (Pastes A-C, respectively). The settings on the colloid mill are identical for each sample.

18. Each Paste is then blended as set forth in Table II:

TABLE II

<u>Product &amp; Lot</u>	<u>Product A</u>	<u>Product B</u>	<u>Product C</u>
Paste	58.93% Paste A	58.93% Paste B	58.93% Paste C
Hydrogenated polyisobutene	30.89%	30.89%	30.89%
Pentameric cyclomethicone	10.08%	10.08%	10.08%
Total Product	99.9	99.9	99.9

19. The clarity, viscosity of the Product, and viscosity of the Product further diluted with 5% hydrogenated polyisobutene is set forth below.

TABLE III

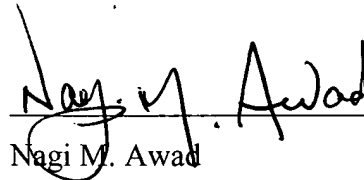
<u>Product</u>	<u>Appearance</u>	<u>Product viscosity</u>	<u>viscosity on dilution with 5% hydrogenated polyisobutene</u>
A	hazy	36,000 cps	10,000 cps
B	clear	<del>220,000</del> 220,000 cps	<del>136,000</del> 136,000 cps
C	clear	232,000 cps	140,000 cps

20. As can be readily seen, the product obtained from the presently claimed invention processes (except that cyclomethicone is used instead of the invention hydrocarbon as the polymerization medium) has different properties than that obtained by the process used in making Product A, notwithstanding that each of

the Products have the same Formulation Components in the same amounts. Thus, the mere difference of adhering to the invention shear control properties during polymerization as opposed to not doing so results in very different products, products with properties that would not have been obvious based on the prior art.

The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed at Newark, NJ, this 13<sup>th</sup> day of January, 2005.

  
Nagi M. Awad